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Indoor Air Quality and the Park Place Remodel

· **What is being done to control indoor air quality (IAQ) during renovation of our space?**

· **What are the IAQ requirements for LEED that must be met before GSA can accept completed space and permit EPA to move in?**

· **What is the testing methodology, the constituents analyzed, and the IAQ requirements for our project?**

General Questions & Answers on Indoor Air Quality

Question 1:

What procedures can we expect to result in increased dust/dirt? At what point in the construction process will these occur? What will be done to control dust and dirt during construction?

Answer:

Demolition and drywall installation and sanding for finish of gypsum wall board (GWB) are activities which typically will produce dusty conditions, however the contractor will provide protection from these activities impacting building environments outside of the construction areas.

The contractor will install temporary dust barriers to segregate dusty areas from occupied building space and will establish negative air pressure zones within dusty work areas to prevent dust migration into occupied areas. If needed, air filtering machines will be employed to provide further protection from dust migration into occupied spaces.

Finally, the Contractor has prepared and is following an Indoor Air Quality (IAQ) Management Plan that is intended to reduce indoor air quality problems resulting from construction. The IAQ includes measures for HVAC protection, source control, pathway interruption, general housekeeping provisions and appropriate construction sequencing.

Question 2:

Will there be air quality sampling during renovation? When and how often? How will EPA get access to the results?

Answer:

Continuous air quality sampling is not planned or typically required in modern remodel projects. The dust control measures outlined in the response to Question 1 are usually sufficient to keep dust migration to a minimum, which makes continuous monitoring unnecessary.

As construction and furnishing of each floor comes to an end, an IAQ contractor will conduct air quality sampling which will be repeated after testing and balancing of the mechanical systems on the floor. The results will be reviewed and accepted by GSA prior to acceptance of the completed space and occupancy by EPA staff.

Question 3:

New products (e.g., carpet, paint, and fabrics) often smell and release gases that could be a problem for sensitive people. What will be done to manage the off-gasing of new products before employees occupy their new spaces?

Answer:

EPA has committed to achieving a number of LEED credits specific to minimizing the release of chemicals into the workplace. As a result, EPA has specified low-emitting materials be used for adhesives & sealants, paints & coatings, flooring systems, composite wood & agrifiber products, as well as in our systems furniture and seating.

Also, an Indoor Air Quality (IAQ) contractor will conduct pretesting of the Indoor Air Quality prior to Test And Balance (TAB) of the HVAC system. Then, once TAB is completed, Final IAQ testing will be conducted, reviewed, and "signed off" prior to GSA acceptance of the spaces and prior to occupancy by EPA staff.

We expect brief and limited periods when staff may be disrupted by construction activities (e.g., noise, odor, dust, etc) or when work on occupied floors may cause an inconvenience (e.g., early/late working hours). While efforts will be taken to minimize these instances, some inconvenience is inevitable. In these instances, we expect to employ:

1) Flex cubes: the establishment of alternation work stations throughout the regional office where staff can temporarily relocate. Efforts are currently underway to make spaces available on all floors.

Link to Additional Health and Safety Related Questions

You can find more information on this document posted to the Park Place Remodel website: Health & Safety Issues of Concern During Building Renovation This document was jointly developed by move team members, GSA, Union and H&S staff to address anticipated health and safety questions. A number of the questions address air quality issues including 1, 2, 3, 10, 14, and 18.

Information About LEED Indoor Air Quality Testing and Requirements

What is the LEED indoor air quality (IAQ) testing method?

The IAQ sampling methodology that LEED uses today evolved from the EPA Research Triangle Park project, prior to LEED, and actually informed the development of LEED. The methodology LEED accepts is based on either the EPA Compendium of Methods for the Determination of Air Pollutants in Indoor Air (based on the RTP with improvements) or ISO testing methods (the methods are 16000-3, 7708, 16000-6, and 4224). Both methods require taking a test during normal operating hours under normal HVAC conditions. The test lasts for 4 hours, and must be taken in a space that is considered representative (or worst case, if spaces are diverse) of those served within the sample area. The sample area must be no more than 1 floor, and served by no more than one ventilation system.

What are acceptable limits for LEED IAQ testing methods?

The limits applied to the various contaminants are based on "recognized acceptable levels." While there is no proof that any limit will guarantee no adverse reactions for all people, research over the past 20 years on the contaminants and their health impacts informs these limits. These tests provide reassurance that the contaminants are at an acceptable limit upon move in, with the recognition that many concentrations will continue to fall as the various building materials are depleted of their contaminants (finish off-gassing) and as the contaminants are captured and permanently removed from the space by the HVAC filters and regular cleaning.

What is tested by the LEED IAQ method?

Particulates are minute airborne particles which may include lint, dirt, dust, bacteria, pollen, dander, etc. These can exacerbate respiratory problems if present in large quantities. Thus we are testing for them, and we are requiring high filtration (the MERV 13 filters) for all outside air during construction.

VOCs are the "new smell" which can cause nausea, headaches or other ailments when present in large concentrations. LEED imposes various VOC limits in paints, adhesives, sealants, etc. These limits are based on Green Seal and South Coast Air Quality Management District (SCAQMD)regulations.

Green Seal is an independent non-profit ANSI standards developer. SCAQMD is a government entity tasked with improving air quality. The Lease imposes more stringent limits on all of these products. The lease also imposes formaldehyde emission limits on wood and insulation products.

What other safeguards are taken for LEED IAQ testing?

EPA purchased new furniture that is Greenguard certified. The Greenguard Environmental Institute is an independent, non-profit, third-party ANSI standard developer. Greenguard requires annual recertification, constant quality monitoring, and utilizes established government and industry programs in its certifications. The Greenguard Certification program encompasses testing 350 individual VOCs, with stringent health-based emissions limits. Greenguard performs chamber tests. Products are received in standard packaging and are placed in the air-tight testing chamber within 1 hour of removing packaging. They remain in the chamber for 48 hours, and then the air within the chamber is tested for contaminants. There is typically a steep emissions curve, in which VOCs escape rapidly in the beginning, and then the rate drops off. The vast majority of VOCs are emitted during this 48 hr period.

Where can I get more information about LEED indoor air quality requirements?

(IEQ Credit 3.2) of the *2009 LEED Reference Guide for Green Interior Design and Construction* describes the LEED requirement for an IAQ management plan and pre-occupant contaminant maximum concentration levels that must be demonstrated in order to obtain a LEED rating.

Where can I find the indoor air quality requirements for EPA's project?

Indoor Air Quality Requirements for our project being employed by the Lessor's contractors as required by our lease. The requirements were developed by Sustainable Design Consulting, EPA's LEED contractor for building projects nationwide.

Indoor Air Quality Testing Reports

and EPA move to the completed space.

Results of Indoor Air Quality Testing in Park Place Building, Floor 21

Results of Indoor Air Quality Testing in Park Place Building, Floor 17

Results of Indoor Air Quality Testing in Park Place Building, Floor 16

Results of Indoor Air Quality in Park Place Building, Floor 2

Results of Indoor Air Quality in Park Place Building, Floor 1

Results of Indoor Air Quality Testing in Park Place Building, Floor 14

Results of Indoor Air Quality Testing in Park Place Building, Floor 15

Results of Indoor Air Quality Testing in Park Place Building, Floor 19

Results of Indoor Air Quality Testing in Park Place Building, Floors 14 & 15 (fungal spores).

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